UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/006,072	12/05/2001	Shaun Clem	6979-0009	8815

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EXAMINER
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ART UNIT	PAPER NUMBER
2666	

DATE MAILED: 03/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

		Application No.	Applicant(s)
Office Action Summary		10/006,072	CLEM ET AL.
		Examiner	Art Unit	
		Michael J. Moore, Jr.	2666	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>*16 December 2005*</u>.

2a)☒ This action is **FINAL.**   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle,* 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>*5-24*</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>*5-24*</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>*05 December 2001*</u> is/are: a)☐ accepted or b)☒ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

        1.☐ Certified copies of the priority documents have been received.

        2.☐ Certified copies of the priority documents have been received in Application No. _____.

        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Drawings

1.   The drawings are objected to because of the following informalities: Currently,

Figures **1-5** contain some elements in handwritten form, which are unclear. It is

suggested by Examiner that a more formal version of these drawings be submitted in

response to this Office Action. In Applicant's remarks to the previous Office Action, it is

stated that substitute formal drawings are enclosed. However, these substitute

drawings do not appear to be present.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in

reply to the Office action to avoid abandonment of the application. Any amended

replacement drawing sheet should include all of the figures appearing on the immediate

prior version of the sheet, even if only one figure is being amended. The figure or figure

number of an amended drawing should not be labeled as "amended." If a drawing figure

is to be canceled, the appropriate figure must be removed from the replacement sheet,

and where necessary, the remaining figures must be renumbered and appropriate

changes made to the brief description of the several views of the drawings for

consistency. Additional replacement sheets may be necessary to show the renumbering

of the remaining figures. Each drawing sheet submitted after the filing date of an

application must be labeled in the top margin as either "Replacement Sheet" or "New

Sheet" pursuant to 37 CFR 1.121(d). If the examiner does not accept the changes, the

applicant will be notified and informed of any required corrective action in the next Office

action. The objection to the drawings will not be held in abeyance.

Specification

The amendments made by Applicant to obviate the objections made to the specification in the previous Office Action are proper and have been entered. These objections have been withdrawn.

Claim Objections

2.   Claims **5, 10, 15, 20, and 21** are objected to because of the following informalities:

Regarding claim **5**, on line 3, a "colon" is needed after the word "comprising". Lastly, on line 8, a "semicolon" is needed after the word "ports".

Regarding claim **10**, on line 3, a "colon" is needed after the word "comprising". On line 7, a "semicolon" is needed after the word "direction". Lastly, on line 9, a "semicolon" is needed after the word "ports".

Regarding claim **15**, on line 3, a "colon" is needed after the word "comprising". On line 7, a "semicolon" is needed after the word "direction". On line 9, a "semicolon" is needed after the word "ports". Lastly, on line 2, the phrase "the process comprising" should be "the apparatus comprising" since this is an apparatus claim.

Regarding claim **20**, on line 3, a "colon" is needed after the word "comprising". On line 4, a "semicolon" is needed after the word "frame". On line 5, a "semicolon" is needed after the word "switch". On line 8, a "semicolon" is needed after the word "ring". Lastly, on line 9, a "semicolon" is needed after the word "identifier".

Regarding claim **21**, on line 2, a "period" is needed at the end of this claim.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

3.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4.   Claims **5, 6, 8-11, 13-16, and 18-24** are rejected under 35 U.S.C. 102(e) as

being anticipated by Dai et al. (U.S. 6,658,016) ("Dai"). *Dai* teaches all of the limitations

of the specified claims with the reasoning that follows.

Regarding claim **5**, "a switching apparatus for receiving and transmitting frames

and messages, wherein the frames consist of relatively long strings of bytes and the

messages consist of small entities" is anticipated by packet switching fabric 10

(switching apparatus) of Figure 1 that transmits bursts of data (frames) as well as

control messaging (messages) as spoken of on column 6, lines 27-51.

"A ring of plural data ports comprising input ports and output ports, wherein each

data port is interconnected to two adjacent data ports, the ring defining for any given

pairing of one input port and one output port a set of zero or more intermediate data

ports in a given direction, the ring for passing the messages received at the input ports

through any respective intermediate ports to designated output ports" is anticipated by

control ring 25 (ring of plural data ports) of Figure 1 that connects control ring input ports

22 (input ports) and control ring output ports 26 (output ports) that are used for receiving

and transmitting control messages (messages) as spoken of on column 6, lines 41-51.

"A crossbar for switching the frames from the input ports to the output ports" is

anticipated by packet transfer switching device 12 (crossbar) of Figure 1 that switches

data from data ring input port 16 to data ring output port 20 as spoken of on column 6,

lines 36-41.

Lastly, "wherein the frames and messages are processed simultaneously" is

anticipated by the transmitting of control messages via control ring 25 to manage

bandwidth resources of data ring segments 18 of data ring 19 as data is transferred via

the data ring as spoken of on column 8, line 63 – column 9, line 4.

Regarding claim **6**, "a parser for separating the frames from the messages to

form two separate data streams" is anticipated by packet transfer switching device 12

(parser) of Figure 1 that forwards data packets onward via Ethernet links 15 while

forwarding control messages onward via control ring segments 24.

Regarding claim **8**, "plural gates respectively associated with each data port for

allowing a given message into a given data port only if no other data is present in the

given data port" is anticipated by control ring processing circuit 60 (gate) of Figure 2A

within packet transfer switching devices 12 of Figure 1 that receives and processes

control messages as spoken of on column 8, line 62 – column 9, line 4.

Regarding claim **9**, "a controller for preventing conflict between message passing

on the ring and switching by the crossbar" is anticipated by destination managing unit

74 (controller) of Figure 2A that arbitrates between competing requests for network port

access as well as monitoring the availability of buffer space in the transmit buffer

queues 80 as spoken of on column 10, lines 1-30.

Regarding claim **10**, "a process for receiving and transmitting frames and

messages, wherein the frames consist of relatively long strings of bytes and the

messages consist of small entities" is anticipated by packet switching fabric 10 of Figure

1 that transmits bursts of data (frames) as well as control messaging (messages) as

spoken of on column 6, lines 27-51.

"Interconnecting plural data ports in a ring, the data ports comprising input ports

and output ports, wherein each data port is interconnected to two adjacent ports, the

ring defining for any given pairing of one input port and one output port a set of zero or

more intermediate data ports in a given direction" and "passing the messages received

at the input ports around the ring through any respective intermediate ports to

designated output ports" is anticipated by control ring 25 (ring of plural data ports) of

Figure 1 that connects control ring input ports 22 (input ports) and control ring output

ports 26 (output ports) that are used for receiving and transmitting control messages

(messages) via the control ring 25 as spoken of on column 6, lines 41-51.

Lastly, "simultaneously with passing the messages, switching the frames from

the input ports to the output ports via a crossbar" is anticipated by the transmitting of

control messages (messages) via control ring 25 to manage bandwidth resources of

data ring segments 18 of data ring 19 as data (frames) is transferred via the data ring

and packet transfer switching devices 12 (crossbars) as spoken of on column 8, line 63

– column 9, line 4.

Regarding claim **11**, "separating the frames from the messages to form two separate data streams" is anticipated by packet transfer switching device 12 of Figure 1 that forwards data packets onward via Ethernet links 15 while forwarding control messages onward via control ring segments 24.

Regarding claim **13**, "allowing a given message into a given data port only if no other data is present in the given data port" is anticipated by control ring processing circuit 60 of Figure 2A within packet transfer switching devices 12 of Figure 1 that receives and processes control messages as spoken of on column 8, line 62 – column 9, line 4.

Regarding claim **14**, "preventing conflict between message passing on the ring and switching" is anticipated by destination managing unit 74 of Figure 2A that arbitrates between competing requests for network port access as well as monitoring the availability of buffer space in the transmit buffer queues 80 as spoken of on column 10, lines 1-30.

Regarding claim **15**, "apparatus for receiving and transmitting frames and messages, wherein the frames consist of relatively long strings of bytes and the messages consist of small entities" is anticipated by packet switching fabric 10 (apparatus) of Figure 1 that transmits bursts of data (frames) as well as control messaging (messages) as spoken of on column 6, lines 27-51.

"Means for interconnecting plural data ports in a ring, the data ports comprising input ports and output ports, wherein each data port is interconnected to two adjacent ports, the ring defining for any given pairing of one input port and one output port a set

of zero or more intermediate data ports in a given direction" and "means for passing the

messages received at the input ports around the ring through any respective

intermediate ports to designated output ports" is anticipated by control ring 25 (ring of

plural data ports) of Figure 1 that connects control ring input ports 22 (input ports) and

control ring output ports 26 (output ports) via packet transfer switching devices 12

(means) that are used for receiving and transmitting control messages (messages) as

spoken of on column 6, lines 41-51.

Lastly, "means for, simultaneously with passing the messages, switching the

frames from the input ports to the output ports via a crossbar" is anticipated by the

transmitting of control messages (messages) via control ring 25 to manage bandwidth

resources of data ring segments 18 of data ring 19 as data (frames) is transferred via

the data ring and packet transfer switching devices 12 (crossbars) as spoken of on

column 8, line 63 – column 9, line 4.

Regarding claim **16**, "means for separating the frames from the messages to

form two separate data streams" is anticipated by packet transfer switching device 12

(means) of Figure 1 that forwards data packets onward via Ethernet links 15 while

forwarding control messages onward via control ring segments 24.

Regarding claim **18**, "means for allowing a given message into a given data port

only if no other data is present in the given data port" is anticipated by control ring

processing circuit 60 (means) of Figure 2A within packet transfer switching devices 12

of Figure 1 that receives and processes control messages as spoken of on column 8,

line 62 – column 9, line 4.

Regarding claim **19**, "means for preventing conflict between message passing on the ring and switching" is anticipated by destination managing unit 74 (means) of Figure 2A that arbitrates between competing requests for network port access as well as monitoring the availability of buffer space in the transmit buffer queues 80 as spoken of on column 10, lines 1-30.

Regarding claim **20**, "a process for receiving and transmitting frames and messages, wherein the frames consist of relatively long strings of bytes and the messages consist of small entities" is anticipated by packet switching fabric 10 of Figure 1 that transmits bursts of data (frames) as well as control messaging (messages) as spoken of on column 6, lines 27-51.

"Determining whether a data packet is a message or frame" is anticipated by the reception of data (frames) via input port 44 and control messages (messages) via input port 48 of management device 42 of Figure 1 as spoken of on column 7, lines 1-12.

"If the data packet is a frame, then routing the frame through a crossbar switch" is anticipated by the transmission of data via packet transfer switching devices 12 (crossbars) and data ring 19 of Figure 1 as spoken of on column 6, lines 36-41.

"If the data packet is a message, then inserting the message into one of a plurality of ports, wherein the ports are interconnected in a ring" is anticipated by the transmission of control messages via control ring 25 (ring) of Figure 1 containing control ring input ports 22 and control ring output ports 26.

"Giving the message a message ring destination identifier" is anticipated by the

destination device ID field (identifier) of control messages transmitted via control ring

output ports 26 as spoken of on column 9, lines 15-23.

Lastly, "passing the message from port to port until the message reaches a

destination port" is anticipated by the transmission of control messages via control ring

25 (ring) of Figure 1 containing control ring input ports 22 and control ring output ports

26 as spoken of on column 9, lines 15-26.

Regarding claim **21**, "if the data packet is a message, then placing the message

in a message-in queue" is anticipated by the reception of control messages by control

ring processing circuit 60 (message-in queue) of Figure 2A via control ring input port 22

as spoken of on column 9, lines 15-26.

Regarding claim **22**, "wherein the message-in queue comprises a FIFO" is

anticipated by the reception of control messages by control ring processing circuit 60

(message-in queue) of Figure 2A via control ring input port 22 as spoken of on column

9, lines 15-26.

Regarding claim **23**, "after the message reaches the destination port, placing the

message in a message-out queue" is anticipated by the reception of control messages

by control ring processing circuit 60 (message-out queue) of Figure 2A via control ring

input port 22 as spoken of on column 9, lines 15-26.

Regarding claim **24**, "wherein the message-out queue comprises a FIFO" is

anticipated by the reception of control messages by control ring processing circuit 60

(message-out queue) of Figure 2A via control ring input port 22 as spoken of on column

9, lines 15-26.

Claim Rejections - 35 USC § 103

5.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

6.   This application currently names joint inventors. In considering patentability of

the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

the various claims was commonly owned at the time any inventions covered therein

were made absent any evidence to the contrary. Applicant is advised of the obligation

under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g)

prior art under 35 U.S.C. 103(a).

7.   Claims **7, 12, and 17** are rejected under 35 U.S.C. 103(a) as being unpatentable

over Dai et al. (U.S. 6,658,016) ("Dai") in view of Szczepanek et al. (U.S. 6,621,818)

("Szczepanek").

Regarding claims **7, 12, and 17,** *Dai* teaches the apparatus of claim **5,** the

process of claim **10,** and the apparatus of claim **15,** respectively. *Dai* does not teach a

clock for moving the messages by one data port for every clock pulse.

However, *Szczepanek* teaches a ring configuration of network switches where a

clock signal is provided by a transmitting ring port to a receiving switch as spoken of on

column 13, lines 33-40.

At the time of the invention, it would have been obvious to someone of ordinary

skill in the art, given these references, to combine the clock signal of *Szczepanek* with

the apparatus of *Dai* in order to provide synchronous receipt of data signals at the

receiving switch as spoken of on column 13, lines 33-40 of *Szczepanek*.

Response to Arguments

8.   Applicant's arguments with respect to claims **5-24** have been considered but are

moot in view of the new ground(s) of rejection provided above.

Conclusion

9.   The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure. Carlson et al. (U.S. 6,728,206) is another reference considered

pertinent to this application.

10.   Applicant's amendment necessitated the new ground(s) of rejection presented in

this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37

CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Michael J. Moore, Jr. whose telephone number is (571)

272-3168. The examiner can normally be reached on Monday-Friday (8:30am -

5:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Seema S. Rao can be reached at (571) 272-3174. The fax phone number

for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

Michael J. Moore, Jr.
Examiner
Art Unit 2666

mjm MM

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